

CLAIM: I claim the atomization jet and cap to be my own invention with significant variation from prior art.

What is claimed is:

- 220 1. An atomization jet assembly for an aromatherapy device, which jet comprises a jet and a jet cap, in which:
said jet comprises:
a top end;
a bottom end;
a capillary break near said top end; and
225 a cavity extending from said bottom end to said top end;
in which:
said top end has an orifice therein leading to said cavity; and
said bottom end has an opening therein which leads from an outer surface of the jet to said cavity; and
said cap comprises:
230 a hollow shaped structure having a top end and a bottom end;
in which:
said top end has a orifice there through which is in alignment with said orifice of said jet;
and
235 the shape of said cap being adapted to fit over said jet from the top end of said jet toward the bottom of said jet;
wherein the shapes of said jet and said cap are similar in profile, such that a capillary space exists between said jet and said cap.
2. The atomization jet assembly of claim I, in which both said jet and said cap have a cylindrical profile.
- 240 3. An aromatherapy device which comprises:
an atomization jet assembly, a base structure, and a particulate separator having a top end and a bottom end;
in which:
245 said atomization jet assembly comprises:
a jet and a jet cap, in which:
said jet comprises:
a top end;
a bottom end;
a capillary break near said top end; and
250 a cavity extending from said bottom end to said top end;

in which:

said top end has an orifice therein leading to said cavity; and said bottom end has an opening therein which leads from an outer surface of the jet to said cavity; and
said cap comprises:

a hollow shaped structure having a top end and a bottom end;

in which:

said top end has a orifice there through which is in alignment with said orifice of said jet; and

the shape of said cap being adapted to fit over said jet from the top end of said jet toward the bottom of said jet;
wherein the shapes of said jet and said cap are similar in profile, such that a capillary space exists between said jet and said cap;

said base structure has a top surface, a bottom surface, and an outer surface connecting said top surface and said bottom surface, wherein:

said top surface has a cavity therein adapted to receive the bottom end of said jet and the bottom end of said particulate separator; and

said outer surface has an opening therein which leads to said cavity in said top surface of said base structure;

said particulate separator is adapted to fit over said atomization jet assembly with the bottom surface of said particulate separator resting in said cavity of the top surface of said base.

4. The aromatherapy device of claim 3, in which both said jet and said cap of said atomization jet assembly have a cylindrical profile.

A slot 36 is machined into the side of the jet fig.15 to provide a place for a 1/16" diameter Teflon rod Fig. 16 to rest. Fig. 1 shows the Teflon rod as the locking component that holds the cap onto the jet. Tension between the cap and jet is accomplished by compressing or deforming the Teflon rod .003 to .007 inches. It is important to maintain resiliency of the Teflon rod by not compressing it too much.

If the jet is stainless steel, both diameters 32 and 34 should have about a .002" interference fit after anodization with reference to the diffuser well jet hole 72 and 74 (See Fig. 12). If a raw aluminum jet is pressed into a raw aluminum well, the interference tolerance should be about .0035 inches. Once the jet is pressed into place, the interface fit creates a seal between the air inlet cavity 86 and the oil supply hole 80 (Fig.18). The tapered sections on jet 33 and 35 crush against the lip 71 and 73 inside the jet well hole Fig 20. This crushing action of material creates a positive sealing ring between the air inlet cavity 86 and all oil containment areas. The entire system relies upon these interface fits and crushing rings to separate the oil cavities from pressurized air. If these seals fail, the diffuser will blow bubbles into the oil or leak oil into the air supply line. Any seal failure is undesirable and renders the assembly useless.